

**REMARKS****A. Drawings:**

The drawings are objected to for not showing reference “1036” or a tapered side wall. Applicant has amended the specification to address the “1036” objection.

Original FIG. 1B has been replaced by a formal drawing. The formal drawing of FIG 1B also corrects the original drawing with respect to top surface and bottom surface. The top surface is “107” and the bottom surface is “105”. No new matter was added.

Original FIG 1A has been replaced by a formal drawing. The formal drawing of FIG 1A has been changed to reflect the cylindrical shape of the pile section. No new matter was added.

Original FIG 2 has been replaced by a formal drawing. The formal drawing of FIG 2 more accurately depicts the bottom view of the pile of FIG 1B. The offset faces, which would be visible from the bottom view, were not shown in original FIG 2. No new matter was added.

Original FIG 3 has been replaced by a formal drawing. The formal drawing of FIG 3 has been changed to correct the orientation of the offset faces 109. No new matter was added.

New FIG. 5 has been added to show a tapered sidewall. Support for FIG. 5 can be found in the last sentence of paragraph 0013 of the original specification. No new matter has been added.

**B. Specification:**

The specification is objected to for using “1036” and “109b” to reference the offset surfaces. Applicant has amended the specification to replace the “1035” with “109b”. No drawing correction is required.

Applicant has also corrected typos in paragraphs 0013, 0016, 0018, and 0021. No new matter has been added.

Applicant has added new paragraph 0011.1 to reflect newly added FIG. 5.

**C. Claim Objections:**

Claims 1, 3, 5, 6, 10, 15, and 18 are objected to due to the informalities identified in the November 17, 2004, Office Action. Applicant has amended the claims to address the objections.

**D. Claim Rejections – 35 USC § 112**

Claim 20 stands rejected for being indefinite. Applicant has amended Claim 20 to address the rejection.

**E. Claim Rejections – 35 USC § 102**

Claims 1-3, 6, 7, 9, 18 stand rejected in light of U.S. Patent No. 6,665,990 (“Cody”). Applicant respectfully traverses the rejection.

Cody discloses a pile with fins that extend from the body of the pile. The fins of Cody are distinct from the body of the pile. Because the fins are distinct, they do not offer the advantages of applicant’s invention. First, the fins of Cody are not strengthened on the up-hole side. As such, in pile driving applications that require high driving forces, such as through rocky soil, the fins of Cody may deform or break. The ridges disclosed by Applicant are not similarly limited. They are integral to the pile. Because they are supported and strengthened by the pile body, they can withstand high driving forces without deforming or breaking.

Second, the fins of Cody add little or no additional load bearing surface during installation. The fins of Cody merely spin the pile as it is driven into the ground. As the pile spins, the effective surface area of the fins is essentially zero. It is only after installation, when the pile of Cody is fixed to a foundation and prevented from spinning, that the surface area of the fins adds an additional load bearing surface. Because the fins of Cody do not provide an additional load bearing surface until the pile is fixed to a foundation, the driving force required to drive the pile is significantly less than the load the pile will be able to support once installed. The ridges of applicants invention are not similarly limited. Though

the ridges also cause the pile to spin during installation, the additional surface area of the offset surfaces provide additional load bearing surface *during* installation. As a result, the force required to drive the pile is closer to the load the pile will be able to support once installed. In this manner, operators can more accurately gage how deep the pile should be driven to support a particular load.

Applicant has amended Claim 1 to further clarify the advantage of applicant's invention. For the foregoing reasons, applicant respectfully asserts that Claims 1-3, 6, 7, 9, 18 are patentable over Cody.

**F. Claim Rejection – 35 USC § 103****1. Claim 8**

Claim 8 stands rejected as being unpatentable over Cody. Applicant respectfully traverses the rejection. Applicant respectfully incorporates herein its § 102 arguments. Further, applicant respectfully asserts that Cody does not disclose or reference a pile with the advantage of off-set faces that are sized as a percentage of the area of the top end wall. The fins of Cody are sized as a percentage of the pile's length. Col. 6, lns 8-12. When more surface area is needed, the fins of Cody are made longer. Cody does not disclose making the fins wider. Indeed, because the pile of Cody spins during installation – and the effective surface area of the fins is essentially zero- the relationship between fin width and the load bearing surface of the pile is not relevant.

Applicant's invention, on the other hand, discloses offset surfaces that provide an effective area during installation. As such, the relationship between the load bearing surface and the offset face is relevant. The offset surfaces must be sized large enough to spin the pile during installation but not so large that the pile has a tendency to work its way deeper over time after the pile has been installed. Because Cody does not disclose a pile in which the relationship between the fin width and the size of the load bearing surface is relevant, one skilled in the art reading Cody would have no motivation to establish such a relationship. As such, applicant respectfully asserts that claim 8 is patentable over Cody.

**2. Claim 5**

Claim 5 stands rejected as being unpatentable over Cody in view of U.S. Patent No. 6,402,432 ("England"). Applicant respectfully traverses the rejection. Applicant respectfully incorporates herein its § 102 arguments.

Further applicant respectfully asserts that it is improper to consider the pile of Cody in light of England. The piles of Cody and England are mutually exclusive, and, therefore, would never be combined. *In re Geiger*, 815 F.2d 686, 2 USPQ 2d 1276 (Fed. Cir. 1987) (holding that obviousness cannot be established absent some teaching, suggestion, or incentive supporting such a combination.). England discloses a hole-forming tool that is

pushed into the ground. Col. 9, ln. 25. Once in place, the hole forming tool is rotated to excavate an area at the distal end of the pile. Col. 9, ln. 42. Concrete or grout is then poured through the hole forming tool into the excavated area. Col. 9, ln. 45. After the concrete or grout has been poured into the excavated area, the forming tool is removed. Col. 9, ln. 47. The resulting pile has a base that is somewhat larger than the rest of the pile. Cody, on the other hand, discloses a pile in which the fins – once the pile is connected to a foundation – provide the additional load bearing surface. Thus, the large base disclosed in England accomplishes the same result as the fins in disclosed in Cody. As such, one skilled in the art would not be motivated to combine Cody with England because the two solve the same problem in a mutually exclusive way. Applicant respectfully asserts that Claim 5 is patentable over Cody in view of England.

### **3. Claims 10-14**

Claims 10-14 stand rejected as being unpatentable over Cody. Applicant respectfully traverses the rejection. As noted with respect to the § 102 rejection, Cody does not disclose a spiral ridge that is integral to the all around sidewalls. Claim 10 has been amended to more clearly recite that the spiral ridge is integral to the all around sidewall(s).

Additionally, claim 12 stands rejected because the fins and Cody can be modified to make the pile spin  $\frac{1}{4}$  for every downward distance corresponding to the height of the pile. Applicant respectfully traverses the rejection. The fins disclosed in Cody spin the pile as it is driven into the soil. While the pile is being driven, the effective load bearing surface of the fins is effectively zero. As a result, the amount of rotation caused by the fins during installation is irrelevant. It is only after the pile is fixed and prevented from rotating that fins of Cody add to the load bearing capability of the pile. As such, one skilled in the art would have no motivation to modify Cody for a particular amount of spin per downward distance. For the foregoing reasons, applicant respectfully asserts that the relationship between the downward distance and amount of rotation is not obvious in light of Cody.

### **4. Claims 15-17**

Claims 15-17 stand rejected over Cody in view of U.S. 4,239,419 (“Gillen”). Applicant respectfully traverses the rejection.

The fins of Cody are positioned on the bottom 10-20 percent of the pile. Col. 6, Ins. 5-10. The ridges of claim 15 extend from the top end wall to the bottom end wall. As such, one skilled in the art would not recognize from Cody the advantages of having ridges that extend from the top end wall to the bottom end wall.

Further applicant respectfully asserts that it is improper to consider the pile of Cody in light of Gillen. Combining the teachings of Gillen to the pile of Cody would defeat the purpose of Cody. *In re Gordon* 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). The pile of Gillen is designed so that threads along the entire length of the pile provide the load bearing capabilities of the pile. Col. 11, Ins. 23-29. Cody is designed such that the fins at the bottom of the pile provide the load bearing capabilities of the pile. Col. 5, Ins. 5-25 (“A characteristic of the tension/compression components of the foundation of this invention is that only the distal below ground end of the component is constructed to provide retention within the terminal soil and/or rock mass.”); Col. 6, Ins. 5-10 (noting that the fins of Cody are located at the bottom 10-20 of the pile). Thus, adding additional pile sections with threads (fins), as disclosed in Gillen, defeats an important characteristic of Cody, which is that fins at the bottom portion of the pile provide the tension/compression strength of the pile.

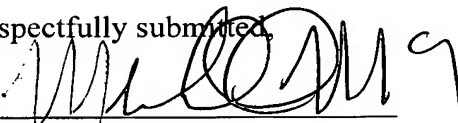
Further, the pile of Gillen is built to withstand compression loads. Gillen discloses that a pile can be built by stacking successive body sections. Col. 12, Ins. 58-66. The piles are not forcibly held together. Because the pile sections are not held together, they would pull apart under tension. Cody discloses piles that are specifically designed for high tension applications. Col. 5, Ins 1-2 (“An important characteristic of the foundation is a deep foundation with a high-tension capacity.”). As such, the stacked pile sections of Gillen are not suited for the tension loads required by the pile of Cody. Because the stacked piles of Gillen are not suited for the application of Cody, one skilled in the art would not be motivated to combine the pile of Gillen with pile of Cody. For the foregoing reasons, applicant respectfully asserts that claims 15-17 are allowable over Cody in view of Gillen.

In view of the above amendments and remarks, applicant believes the pending application is in condition for allowance.

Applicant believes that all additional fees required are included with this response. However, if additional fees are due, please charge our Deposit Account No. 06-2375, under Order No. HO-P02803US0 from which the undersigned is authorized to draw.

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Respectfully submitted,

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Attachments

**AMENDMENTS TO THE DRAWINGS**

Original FIG. 1B, FIG 1A, FIG 2, and FIG 3 has been replaced by formal drawings. Original drawings showing corrections are attached hereto in Exhibit A. Formal drawings for FIG 1B, 1A, 2, and 3 are attached hereto in Exhibit B. No new matter was added.

FIG 5 has been added. New FIG 5 is attached hereto in Exhibit B. No new matter was added.





FIG. 1

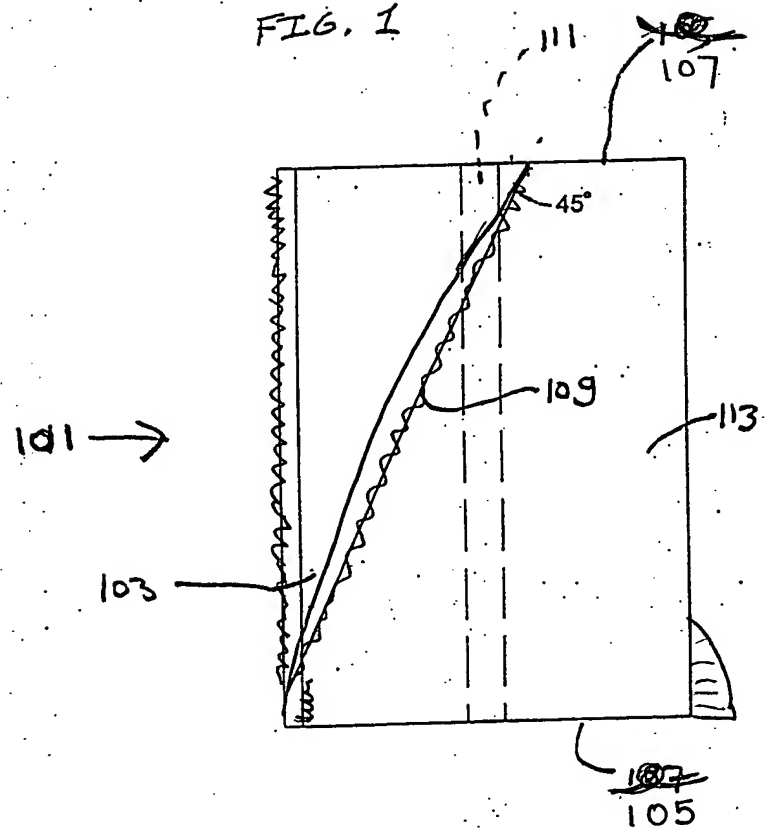


FIG. 2

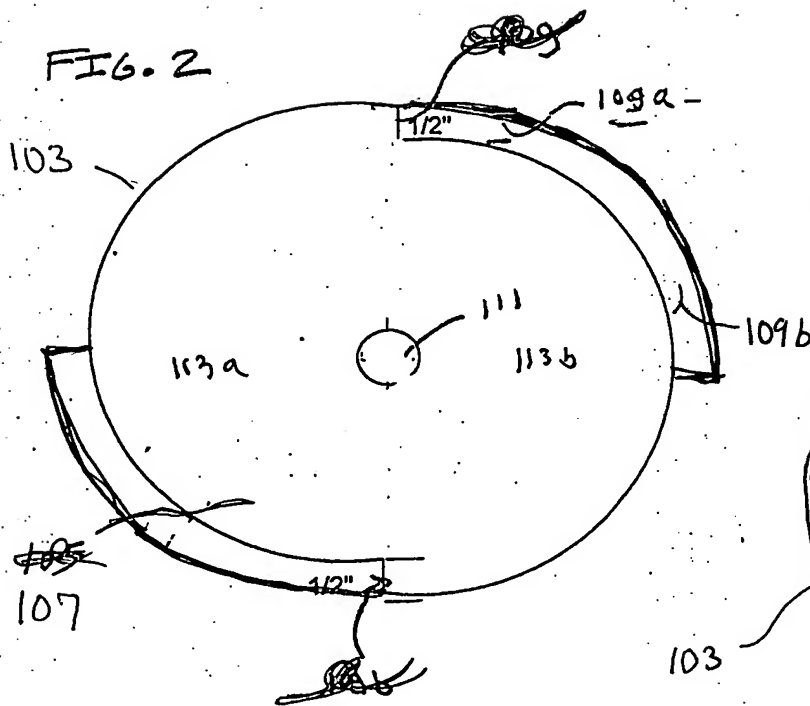


FIG. 3

